

15ARC 7.1 – ARCHITECTURAL DESIGN - VII

CONTACT PERIODS : 9 (Studio) per week

PROGRESSIVE MARKS : 150

VIVA MARKS : 150

INTRODUCTION/OVERVIEW:

Post six semesters of architectural training, from introduction to architecture: design of public buildings, in concurrence with allied subjects, the student is expected to have developed a worldview with which he/she is able to analyse a given design brief. The objective of this semester is to activate that critical mind, with an underlying emphasis on performative/responsive architecture. The studio has two main themes, of which any one can be proposed for a studio.

OBJECTIVES:

1. *To understand the subject of Architecture as an integrated field which works in tandem with Technology, Design, Economy, Ecology, Geography and Sociology etc*
2. *To rethink architecture as a man-made ecosystem, which is self-contained and sustainable*
3. *To be able to identify and Augment the right set of knowledge kit (from the learnt courses and electives) that will steer the approach to the brief in a strong direction.*

OUTLINE:

Each of the two themes approach sustenance in different ways, one which looks at traditional wisdoms of sustainability and the other which address the same through technology, digital media and evaluating efficacy in design.

Note: Relevant theoretical and technical inputs need to be part of the studio to facilitate architectural design

1.Meta Architecture: The work in question will strongly root for itself. It will search meaning, solutions, and best practices from principles of regional/vernacular architecture and reincarnate itself as embodiment of contemporary expression instilled with traditional wisdom. The identity of the building will be an outcome of the interplay between the older principles and newer materials. Articulation of the building character through details will remain a primary motive of the studio. Although drawn from the traditional principles, the nature of the buildings remains current. An architectural vocabulary could be built by extending the exercise to service design, furniture design and facade development. The Program will utilize both active and passive energy efficient methods in its climatic design.

Case study practices: David Adjaye architects, ke're' Architecture, Morphogenesis, CnT Architects, Small projects, Matharoo associates, Roger Anger houses, Popo Pingel architecture, Aga khan architecture

Case study concepts: Aqua ducts, Step wells, Wind towers, Solar chimneys, Water coolant systems, HVAC systems etc

Program: Office/commercial complexes, Community center, Institutions, Public Library etc

Suggested References:

- Elizabeth M. Golden, "Building from Tradition: Local Materials and Methods in Contemporary Architecture", 2018, Routledge.
- Paola Sassi, "Strategies for sustainable Architecture", 2006, Taylor and Francis Group.

2. Performative Architecture: It is the architecture, in which building becomes a living, breathing, consuming, excreting organism. Its Facade i.e, skin of the building will simultaneously resolve the structural, aesthetic, climatic requirements of the building. Its architectural expression, shall not be a static response to its context, but a dynamic one.

The engineering aspect of the building typically continues into its internal function. From foundation to form, performative architecture, rethinks the formulaic approach to building design. The program will consider the forces of nature such as Sun, Wind, Water, and its absence as controlling parameters of its function. In order to extract maximum design mileage, the program shall be situated in regions with extreme weather conditions.

Case study practices: Arup associates, Atelier Jean Nouvel, Heatherwick Studio, SOM, Calatrava Architects, Toyo ito architects, Grimshaw architects, Thornton Tomasetti, Renzo Piano architects

Case study concepts: Responsive facades, dynamic facades, exoskeletal structures, Kinetic structures, etc

Program: Office/commercial complexes, Community center, Institutions, Public Library etc

Suggested References:

1. Lisa Iwamoto, "Digital Fabrications: Architectural and Material Techniques", 2009, Princeton Architectural Press.
2. Jesse Reiser, " Atlas of Novel Tectonics", 2006, Princeton Architectural Press.
3. Russell Fortmeyer, Charles F. Linn, " Kinetic Architecture: Designs for Active Envelopes", 2014, The Images Publishing Group.
4. Michael Fox, " Interactive Architecture: Adaptive World", 2016, Princeton Architectural Press.

OUTCOME:

- I. In depth understanding of Green concepts, be it Vernacular, active energy efficient methods or projective models. Case study work should be presented as knowledge sharing exercise, through models, 3d models and explanatory diagrams.
- II. Building simulation models should be a mandatory output of the studio, to utilize software technology as an effective analytical and design management tool.
- III. The complexity of the project can be broken down into components and treated as one/two minor projects and one major component.

Note:

The suggested directions can be altered and evolved to suit the expertise of the studio faculty, keeping in mind that the studio shifts to a explorative (concept driven) path from a program driven model.

15ARC 7.2 – MATERIALS AND METHODS IN BUILDING CONSTRUCTION VII

CONTACT PERIODS : 6 (1 Lecture + 5 Studio) per week

PROGRESSIVE MARKS : 50

DURATION OF EXAM: 4 Hrs

THEORY MARKS : 100

OBJECTIVE: *To familiarize students with construction techniques in interior spaces and to provide an introduction to prefabrication design, analysis and manufacture processes.*

OUTLINE:

MODULE 1

1. **Introduction to wood products as building material:** Plywood, block board, particle board, hard board, laminates, MDF, HDF, HDPE wood wool, etc.
2. **Interior residential construction:** Detail of wardrobes and show cases in wood, ferro cement and stone.

MODULE 2

3. **Interior residential construction:** modular kitchens and cabinet shelves.
4. **Interior office construction:** book selves, file cabinets and work stations. Partition systems: wall and ceiling using plywood, PVC, marble, granite, aerated concrete blocks, gypsum board, glass etc.

MODULE 3

5. **False ceiling systems:** Fiber board, plaster of Paris, particle board, wood wool, metals, straw and any other materials introduced in the market including acoustic ceiling.
6. **Pre stressing and post tensioning:** Introduction to pre-stressing and post tensioning of building components especially floor slabs and beams.

MODULE 4

7. **Introduction to Advanced foundation:** Mat foundations, Pile foundations; different types of piles, precast piles, cast-in-situ piles in wood concrete and steel.
8. **Pile foundation construction:** method of driving piles, Sheet piling, pile caps, etc.
9. **Earth retaining structure:** Selection, Design, Construction of retaining structures including gravity, cantilever, sheet pile, and anchored earth and mechanically stabilized earth (reinforced earth) walls.

MODULE 5

10. **Bamboo Construction:** detailing of walls, wall panels, doors, windows and roof in Bamboo.
11. **Prefabrication in India:** Advantages and relevance in the Indian context. Prefabrication: Design, analysis and manufacture processes. Study of one example.
12. **Introduction to advanced methods of Building construction:** CAD /CAM fabrication and 3D printing.

Note:

Minimum one plate on each construction topic. Site visits to be arranged by studio teachers. Study of material applications in the form of portfolio.

REFERENCES:

1. Chudley, "Construction Technology"
2. Barry, "Construction of Buildings"

15ARC 7.3- BUILDING SERVICES – IV(ACOUSTICS AND NOISE CONTROL)

CONTACT PERIODS : 3 (Lecture) per week

PROGRESSIVE MARKS : 50

DURATION OF EXAM: 3 Hrs

THEORY MARKS : 100

OBJECTIVE: *To explore the role and capacity of sound in all its variations and to enhance aural experience in built environment- within and without.*

OUTLINE:

MODULE 1 (Introduction to Sound and Room Acoustics)

- 1) **Introduction to Sound:** Origin and nature of sound, its characteristics and measurement— Amplitude, frequency, period, wavelength, velocity of sound, sound pressure, sound intensity, decibel scale, sound and distance – inverse square law. human hearing, auditory range for humans (Frequency and Intensity – threshold of audibility and pain), pitch (association with frequency), tone, loudness (association with amplitude and intensity), Phon.
- 2) **Room Acoustics:** Reflection - Nature of reflection from plane, convex and concave surfaces, diffraction, Absorption, Echoes, focusing of sound, dead spots, flutter echo. Room resonances, Reverberation - reverberation time (RT) calculation using Sabine's and Eyring's formulae. Effect of RT on speech and music.

MODULE 2 (Acoustical Tools, Measurements and Materials)

- 3) **Acoustical Tools and Measurements:** Use of SLM (Sound Level Meter), AI (Articulation Index), STI (Speech-Transmission Index), Speech Intelligibility. Sound Attenuation. Absorption coefficients of acoustical materials, NRC value, NC Curves for various spaces.
- 4) **Acoustical Materials:** Porous materials, panel absorbers, membrane absorbers, acoustical plasters, diffusers, cavity or Helmholtz resonators. Role of functional absorbers, Adjustable acoustics and variable sound absorbers. Acoustical correction and retrofits to existing spaces.

MODULE 3 (Acoustical Design)

- 5) **Acoustical Design of Auditoriums - Multipurpose Halls:** History of Greek, Roman theatres. Use of IS code 2526 - 1963 for design and detailing of Auditoriums - Cinema Halls - Multi-purpose Halls - Halls for speech and music.
- 6) **Acoustical Design and Detailing of Other Spaces** – Open air theatres, Halls for Indoor Sports, home theatres, recording studios, open plan offices, etc. Need and use of sound reinforcement systems, sound masking systems and speech privacy.

MODULE 4 (Noise reduction and Control)

- 7) **Introduction to environmental noise control:** Noise, its sources and its classification - outdoor and indoor, airborne and structure borne, impact noise, noise from ventilation system, community and industrial noise. Noise transmission, Mass law and transmission loss. Maximum acceptable noise levels. Design Principles – reduction at source, reduction near source, etc.

- 8) **Constructional measures of noise control and sound insulation** -Enclosures, Barriers, Sound insulation (AC Ducts and plants), Vibration isolation – control of mechanical noise, floor, wall, ceiling treatment. Sound Isolation. Construction details of composite walls, double walls, floating floors, wood-joint floors, plenum barriers, sound locks, etc. STC (Sound Transmission Class) ratings.

MODULE 5 (Noise reduction and Control-II)

- 9) **Industrial noise: Sources of industrial noise** - impact, friction, reciprocation, air turbulence and other noise. Methods of reduction by enclosures and barriers.
- 10) **Introduction to Urban Soundscape** – Introduction to Urban noise, Noise sources - Air traffic, Rail traffic, Road traffic, Seashore and inland. Traffic planning against outdoor noise. Noise reduction and control by Site planning, Town planning and Regional Planning consideration. Role of Architects / Urban Planners in shaping the urban soundscape. Sustainable design strategies in building acoustics.

NOTES:

Suggested Assignments:

- A. The subject teacher could arrange for visits to acoustically designed and treated multipurpose halls - general purpose halls used for both speech and music, cinema theatres, Industrial Buildings, etc.
- Case study reports could be submitted as group assignments.
- B. Design of a multipurpose hall - rooms for speech and music for optimum acoustics - drawings and construction details of acoustical treatment.

REFERENCES:

- 1) M.David Egan , "Architectural Acoustics".
- 2) Leslie L. Doelle , "Environmental Acoustics".
- 3) Vern O.Knudsen and Cyril M.Harris , "Acoustical Designing in Architecture".
- 4) Peter H. Parkins and H. R. Humphreys , "Acoustics, noise and buildings".
- 5) F.Alton Everest and Ken C. Pohlmann , "Master Handbook of Acoustics".
- 6) A.B. Wood, "A Text book of Sound".
- 7) T.M. Yarwood, "Acoustics".
- 8) Duncan Templeton , "Acoustics in the Built Environment".
- 9) J E Moore , "Design for good Acoustics and noise control".
- 10) T. E. Vigran , "Building Acoustics".
- 11) W.J. Cavanaugh, C.T. Gregory and J.A. Wikes, "Architectural Acoustics: Principles and Practices" 2nd Edition, Codes and standards–
 - National Building Code of India (NBC) 2016; Part 8 Section 4
 - IS 1950: 1962 Code of practice for sound insulation of non-industrial buildings
 - IS 3483: 1965 Code of practice for noise reduction in industrial buildings
 - IS 4954: 1968 Recommendations for noise abatement in town planning
 - IS 11050 (Part 1) 1984: Rating of sound insulation in buildings and of building elements: Part 1 Airborne sound insulation in buildings and of interior building elements
 - IS 11050 (Part 2)1984: Rating of sound insulation in buildings and of building elements: Part 2 Impact sound insulation
 - IS code 2526: 1963Code of practice for acoustical design of auditoriums and conference halls

15ARC 7.4- PROFESSIONAL PRACTICE – I

CONTACT PERIODS : 3 (Lecture) per week

PROGRESSIVE MARKS : 50

DURATION OF EXAM: 3 Hrs

THEORY MARKS : 100

OBJECTIVES: *To understand the responsibilities & liabilities of the Profession. To appreciate the attitude of professionalism.*

OUTLINE:

MODULE 1

1. **Profession:** Idea of profession; differences between profession, trade and business.
2. **Profession of architecture:** Types and extent of services offered by architects, scale of fees, stages of payment, and contract between client and architect.
3. **Code of Professional Conduct:** Architects Act of 1972, role of Council of Architecture, Indian Institute of Architects in functioning of the Profession.

MODULE 2

4. **Practice:** Types of Architectural firms, proprietorship, partnership, associate ship and private limited firms; advantages and disadvantages of each type of firm; building clientele and projects.
5. **Architectural competitions:** guidelines of COA, procedure of conduct of competitions.
6. **Office Management:** Administration of Architectural firms; basic accounting procedures.

MODULE 3

7. **Tender:** Tender document and its content. Types of tenders, advantages and disadvantages of each type; suitability to various projects. Tender notices, opening, scrutiny, process of selection and award.

Architect's role in tender process.

Earnest Money Deposit, Security Deposit, Retention Amount, Mobilization Amount and Bonus & Penalty Clauses.

Issues arising out of tendering process and the role of an architect.

MODULE 4

8. **Contract:** General Principles, types of contract; Contract document.
Contract Management: Architect's role in Contract Management.
Conditions and Scope of Contract; role of an architect in ensuring completion of contract.

Issues arising in Contract: i) Termination of contract, ii) Certificates of value and quality, iii) Virtual completion and final completion, iv) Defects liability period, v) Latent and patent defects, vi) Liquidated and un-liquidated damages, vii) Extension of time, delays and penalty, viii) Non tendered items, extras, extra work, additional works, variations, rate analysis and architect's role in certification of variations, ix) Prime cost, provisional sum.

Supervision and Contract Administration: Site visits, site meeting, co-ordination with various agencies, site book, site instructions, clerk of works and site office.

Bill checking, quality auditing, handover procedures and final certification.

Disputes in contract and architect's role in resolving disputes. Case studies from practice highlighting disputes in contract and methods adopted to solve such disputes.

MODULE 5

9. **Byelaws:** Building byelaws, National Building Code, floor area ratio, floor space index, floating FAR, zoning regulations.

Overview of Master Plan/CDP of relevant cities.

REFERENCES:

- 1) Namavathi, Roshan, Professional Practice for Architects and Engineers, Lakhani Book, New Delhi, 2001.
- 2) Krishnamurthy K G and Ravindra S V, Professional Practice, S V Ravindra, 2009, Bangalore.

15ENG 7.5 – EARTH QUAKE RESISTANT STRUCTURES

CONTACT PERIODS: 3 (1 Lecture+ 2 Studio) per week

PROGRESSIVE MARKS: 75

VIVA MARKS: 75

OBJECTIVE: *Integration of structures with architectural objectives by developing informed intuition for structures, emphasizing underlying concepts, synergy of form and structure towards creative design integration. To develop an understanding and design of structures for gravity and lateral seismic loads.*

OUTLINE :

1. **Term project Introduction:** High Rise Building (Plan and elevation with general framing arrangement).
2. **National Building Code load calculation:** Gravity loading: Dead and live load calculation.
3. **Understanding earthquakes and Seismology:** Earthquake- Origin and Propagation; Complexity of Ground Motion; Earthquake occurrence in the world, plate tectonics, faults, earthquake hazard maps of India & and the States. Causes of earthquake, seismic waves; magnitude, intensity, epicenter and energy release, characteristics of strong earthquake ground motions, Seismological Instruments: Seismograph, Accelerograph and Seismoscope.
4. **Earthquake Effects on Buildings:** How buildings respond to earthquakes; Building forms and Seismic effects related to building configuration. Materials, Plan & vertical irregularities, redundancy. Horizontal & vertical eccentricities in mass and stiffness distribution, soft storey etc.
5. **Earthquake Resistant Design Strategies:** Concept of seismic design, stiffness, strength, period, ductility, damping, hysteric energy dissipation, center of mass, center of rigidity, torsion, design eccentricities.
 - a. Seismic Resistance System
 - b. Seismic Isolation System
 - c. Seismic Damping System
6. **Seismic Design to Satisfy Indian Codes:** Seismic loading based on IS 1893 Code Static Analysis Procedure: Horizontal seismic co-efficient, valuation of base shear, distribution of shear forces in single and multistory building.
7. **Structural Detailing in Earthquake Resistant Construction:** Seismic Detailing of Masonry buildings (IS: 4326), Seismic Designs & Detailing of RC & Steel Buildings: IS: 1893 - 2002; IS: 13920 - 1993; IS: 456 - 2000; IS: 800 - 2004.
8. **Recent techniques:** Recent techniques like dampers, base isolation and other energy absorbing devises used in Earthquake resistant design.
9. A case study highlighting the above concepts.

Note: Studio work is involved in topics 1, 4, 5, 6, 7 and 9.

REFERENCES:

1. Martin Bechthold, Daniel L Schodek , "Structures", PHI Learning Private limited.
2. Pankaj Agrawal and Manesh Shrikande , "Earthquake resistant design of structures", PHI learning Pvt. Ltd.
3. Dr Vinod Hosur , "Earthquake resistant design of building structures", Wiley Precise.
4. "Learning earthquake design and construction- earthquake tips", IIT Kanpur- NICEE
5. IS: 4326- Seismic detailing of Masonry buildings.
6. IS: 1893-2002, IS: 13920-1993 , IS: 456-2000, IS: 800-2007 – Seismic design and detailing of RC and steel structures.

15ARC 7.6- URBAN DESIGN

CONTACT PERIODS : 3 (Lecture) per week

PROGRESSIVE MARKS : 50

DURATION OF EXAM: 3 Hrs

THEORY MARKS : 100

OUTLINE

1. To introduce theoretical aspects of Urban Design
2. To understand the changing attitude toward Urban form/Space and Architecture
3. To familiarise Urban Design theory through traditional and contemporary examples

Theoretical aspects of urban design are through following approach:

MODULE-1

Behavioural /Perceptual approach: City as visual experience– walking, observing, documenting/recording and interpreting city/ and its elements –such as neighborhood, street, block, building, architectural elements.

Sub module: Theories works of Gordon Cullen, Kevin Lynch.

MODULE-2

Social cultural Approach: study of social and cultural layer that influence urban design and architecture.

Sub Module: Theories / approach by Jane Jacob, Kevin Lynch

MODULE -3

Morphological approach: built and un-built, relation with scale, size and influence of byelaws and regulation. Example showing transformation quality of space and form

Sub Module: Theory and works of Collin Rowe - Street, public square facade. Notion of Collective Memory by Aldo Rossi

MODULE-4

Functional and Temporal approach: formal and informal urban environment and readability differences,

Sub Module: Approach by Kevin lynch through good city form, critical study by Charles Correa & Indian example such as Connaught place, church gate, Ballard estate, Gate way of India etc.

MODULE-5

Environmental approach: relationship with physical activity and built environment, human activity and building as environment

Sub Module: study by Charles Correa & Indian example

REFERENCES :

1. Aldo Rossi, "Architecture of the City", Oppositions Book, The MIT Press

2. Christopher Alexander, "A Pattern Language ", Oxford University Press, 1977.
3. Rob krier, " Street, public square facade"
4. Kamu Iyer, "Boombay: From Precincts to Sprawl", Popular Prakashan Ltd; 2014.
5. Kevin Lynch, "The Image of the City", MIT Press, 1960.
6. Kevin Lynch, " Good City Form", MIT Press, 1981.
7. Gordon Cullen, " The Concise Townscape", Architectural Press, 1971.
8. Charles Correa, " Housing and Urbanisation: Building Ideas for People and Cities", Thames & Hudson Ltd, 2000.

15ARC 7.7- INTERIOR DESIGN

CONTACT PERIODS: 5 (Studio) per week

PROGRESSIVE MARKS: 100

OBJECTIVE: *This course aims to introduce the students to the discipline of Interior Design and to develop skills required for handling interior design projects. The course shall equip the students with theoretical, conceptual, practical and creative aspects of Interior Design along with its allied fields with particular emphasis on **commercial, habitat [residential & hospitality], educational and public space interiors.***

OUTLINE:

- **INTRODUCTION:**
Definition and process of interior design; difference between interior design and decoration; vocabulary of interior design through elements in interior design like color, materials, furniture, lighting; aspects of interior design related specifically to typology and function, difference between themes and concepts in interior design.
- **OVERVIEW:**
Overview of history of Interior Design in the Western, Asian and Indian context through the ages relating to contemporary design; theories and design movements in Interior Design; evolution of space planning concepts and design ideas; influence of the vernacular, folk arts and crafts of a region on its Interior Design; role of activity and anthropometrics in Interior Design; design psychology and perception through color, light, scale, proportion, enclosure and fenestration.
- **COMPONENTS OF INTERIOR DESIGN:**
Functional, aesthetic and psychological aspects of interior space components; design, material choice, method of construction, treatment and finishes of components such as floors, ceilings, walls, partitions, fenestrations; fixtures in relation to space design and construction technology.
- **INTEGRATION OF INTERIOR SPACE WITH SERVICES:**
Addressing user specific needs and scope of design of services as fundamental aspects of interior design; enhancement of space experience with integration of supporting services like climatic comfort, air conditioning, plumbing and sanitation, electrical, lighting, air conditioning and acoustics.
- **ALLIED FIELDS – FURNITURE DESIGN & PLANTSCAPE:**
Role of furniture, ergonomic factors of furniture design and materials used; Design and types of furniture based on its style, characteristics and functional application, barrier free and inclusive design; design for the specially abled; materials and methods of construction of furniture, design trends, innovations and ideas of furniture for specific types of interiors; integration of interior landscaping elements like plants, water, paving, artifacts, etc. and their physical properties and effects on spaces.
- **ALLIED FIELDS – LIGHTING DESIGN:**
Concepts and perceptions in interior lighting design; modulation of lighting [artificial and natural lighting] to develop strategies for interior space and element relationship; quantitative vs qualitative aspects of lighting design; emphasis of design features like focal points in interior design using lighting; different types of interior lighting fixtures - their effects and suitability in different contexts.

• **DESIGN PROJECT – MINOR AND MAJOR:**

Interior design is a user centric approach where both the function and aesthetics get their due consideration. The understanding of all the above listed aspects related to interior design will be explored, designed and detailed through two design projects [Minor and Major]. The project will delve into interior design through function, user and aesthetic based space planning and visualizations, material specification and detailing, colors, textures, furniture design and lighting design along with interior landscaping if needed. Design will be explored as a wholistic approach of plan, section, details, materials, technology, services integration and views.

METHODS:

- Presentations and discussions on various concepts and components of interior design, integration of services with interior design and allied fields like furniture design and lighting design.
- Interactions with industry experts like interior designers, lighting designers and service consultants to share their experience and perspective on interior design.
- Visit to interior construction sites to understand the process of construction and prototyping and lighting product manufacturing factory visits.
- Material sample and specification compilation along with vendor input to augment the understanding of material detailing with latest technology.
- Design ideation, desk feedback / crits and juries for design projects that incorporate all the learnings.

ASSESSMENT:

The design projects will be evaluated as assignments done individually. The assessment will be through presentations, concept / story board, all relevant drawings like plans, sectional elevations, reflected ceiling plans, flooring plans, wall sections, services layout, construction details, views, models, material samples and specification boards.

REFERENCES:

1. Pile, John.F, "Interior Design", Pearson; 4 edition (2007)
2. Ching, Francis D.K., "Interior Design Illustrated", John Wiley & Sons; 3 edition (2012)
3. Panero, Julius and Zelnik, Martin, "Human Dimension and Interior Space: A Source Book of Design Reference Standards", Watson-Guptill; New edition (1979)
4. DeChiara, Joseph, Panero, Julius and Zelnik, Martin "Time Saver's Standards for Interior Design", McGraw-Hill Professional (2001)
5. Rengel, Roberto J, "The Interior Plan: Concepts and Exercises", Bloomsbury Academic USA; 2nd Revised edition (2016)
6. Mitton, Maureen, "Interior Design Visual Presentation: A Guide to Graphics, Models and Presentation Techniques", John Wiley & Sons; 4 edition (2012)
7. Pile, John.F, "A History of Interior Design Hardcover", John Wiley & Sons Inc (2000)
8. Kurtich, John & Eakin, Garret, "Interior Architecture", John Wiley & Sons (1995)

15 ARC 7.8- ELECTIVE -V

CONTACT PERIODS: 3 (Studio) per week

PROGRESSIVE MARKS : 50

a) CRAFT IN ARCHITECTURE:

OBJECTIVE:

- *Awareness of rich traditions of Architectural craft*
- *Ways of imagining the potential of existing systems*
- *Broaden the mind beyond available construction systems*
- *Explore possibilities in Crafting of Architecture*

COURSE CONTENT:

- Introduction
- Case Studies
- Field Trip , Research to identify potential area of interest for participants to focus further on
- Interaction with Craftsmen to understand the function, material and technique
- Design Exercises focusing on crafting certain elements / parts of a Building or the overall

COURSE METHODOLOGY:

- Lecture Sessions,
- Case Studies,
- Discussions,
- Research,
- Field Trips,
- Short Design Exercises.

COURSE OUTCOME:

- Appreciate finer nuances of making of Architecture into a reality.
- Overview towards the wealth of traditional / existing practices.
- Insight to potential direction of evolution of making of Architecture.
- Attempts to take forward existing systems.
- Introduction of systems form across the border of the discipline.
- Develop ability to craft making of Architecture.

REFERENCES:

1. Peter Davey, "Arts & Crafts Architecture", 1997, Phaidon Press, London.
2. Maureen Meister, " Arts & Crafts Architecture", 2014, University Press of New England.
3. Miriam Delaney, "Studio Craft & Technique for Architects", 2015, Laurence King Publishing , London.
4. Brian Mackay-Lyons, "Local Architecture: Building Place, Craft and Community", 2014, Princeton Architectural Press, New York.

b) ARCHITECTURAL WRITINGS AND JOURNALISM

OBJECTIVE:

This course aims to introduce writing on architecture as a method to study and interpret the built environment through analysis, criticism and review. The course shall equip the students with the fundamentals, relevant skills and techniques of various genres of architectural writing and journalism.

OUTLINE:

Introduction: Overview and objectives of role of writing and journalism in architecture; Writing and Journalism skills: research, writing, editing and criticism.

Creative Writing: Techniques and methods of expressing an architectural narrative or description through forms of creative writings such as fiction, poetry, travel writing, blogging which are based on architecture or employ architecture as a context.

Analytical Writing: Techniques and methods of researching, analyzing and critiquing architecture through forms of analytical writings such as research papers, journal writings and critical essays.

Documentation and Technical Writing: Techniques and methods of recording, authenticating and examining architecture through documentation and technical writings.

Architectural Journalism: Introduction, scope and constraints of print, audio and visual architectural journalism in the context of newspapers, radio, film, and television. Roles of an architectural journalist as a reporter, reviewer, cartoonist, interviewer, feature writer and specialist writer.

Contemporary Architectural Writing and Journalism: Issues and Potential:

Role of an architect as a writer and journalist in scripting the narrative of architecture; Topics relevant and needed in an architectural journals and current issues; Mass Media and Public Opinion – critique of architecture through new age journalism and technology; Issues of code of ethics, copyright, royalty, publishing rights and policies; Citation and plagiarism.

METHODS:

- Presentations on the techniques of writing different genres
- Discussions of various readings to familiarize and analyze the methods and styles of writing.
- Writing assignments related to the genres culminating in a term paper
- Interactions with architectural writers and journalists to share their experience / perspective
- Visit to Publication / Media house to understand the process of publishing

Assessment:

The individual assignments will be assessed via presentations, writings and term paper.

REFERENCES:

1. Wiseman, Carter (2014), "Writing Architecture: A Practical Guide to Clear Communication about the Built Environment", Trinity University Press
2. Lange, Alexandra (2012), "Writing About Architecture: Mastering the Language of Buildings and Cities", Princeton Architectural Press

3. Schmalz, Bill (2014), "The Architect's Guide to Writing: For Design and Construction Professionals", Images Publishing Dist Ac
4. Sykes, A. Krista (2007), "The Architecture Reader: Essential Writings from Vitruvius to the Present", George Braziller Inc.
5. Musa, Majd, Al-Asad, Mohammad (2007), "Architectural Criticism and Journalism", Umberto Allemandi & Co
6. Edward Jay Friedlander and John Lee (2000), "Feature Writing for Newspapers and Magazines", 4th edition, Longman.

c) BIOMIMICRY:

OBJECTIVE:

1. *To understand 'Biomimicry' and 'Biophilia'*
2. *Reconnect with nature: learning to observe nature by function*
3. *To understand and explore how biology can be integrated with design*
4. *To examine how the 'biomimicry approach' can influence sustainable designs and innovations*

COURSE CONTENTS:

- a) Understanding Biomimicry : theory and case studies
- b) Reconnect with Nature (including a field trip)
- c) Patterns of Biophilia
- d) Life's principles: the universal principles all of life follows to be sustainable
- e) Integrating Biology in Design: the design process along with design exercise to realize the process of discovering biological inspiration and its application

METHODOLOGY:

The course would follow the following modes of teaching:

1. Lectures sessions interwoven with games and activities to understand biomimicry concepts
2. Field trip & outdoor exercises to reconnect and seek inspiration from nature
3. Discussions & presentations
4. Library/ web research & reading
5. Interviewing scientists/ biologists
6. Design exercises

LEARNING OUTCOME:

The course aims to educate and equip students in the following way:

- a. Appreciate and understand cross disciplinary design practice of Biomimicry
- b. Understanding of Biomimicry and biophilia & its relevance in design
- c. Appreciate the importance of 'reconnection/ connection' with nature
- d. Understanding Life's overarching Principles & how this can inform sustainable solutions
- e. Understanding and being able to 'integrating biology in design'

REFERENCES:

1. Michael Pawlyn, "Biomimicry in Architecture", 2011, RIBA Publishing, London.
2. Dora Lee, "Biomimicry: Inventions Inspired by Nature", 2011, Kids Can Press, Toronto, Canada.
3. Stephen R. Kellert, "Biophilic Design: The Theory, Science and Practice of Bringing Buildings to Life, 2011, John Wiley & Sons, New Jersey.
4. Stephen R. Kellert, "Nature by Design: The Practice of Biophilic Design", 2018, Yale Univ.Press.
5. Benjamin R. Krueger, "Biomimicry: Nature as Designer", 2016, CreateSpace Independent Publishing Platform

15ARC 8.1 – ARCHITECTURAL DESIGN - VIII (ARCHITECTURE IN URBAN CONTEXT)

CONTACT PERIODS : 10 (Studio) per week

PROGRESSIVE MARKS : 150

VIVA MARKS : 150

INTRODUCTION:

In an increasingly urbanized world, architecture plays a vital role in shaping and influencing complex urban environment (the design of cities) and creating meaningful places that enrich the lives of people. It is important to understand the many scales at which architecture can engage with the urban context, from building on the unique local character/form to enhance public spaces to urban development projects (infrastructure/transport interchanges/terminals) that impact larger geographic region beyond the city. The Studio intent is to introduce the discipline urban design (interdisciplinary premise, scope, techniques and best practices) and understand architecture as a part of implementing urban design projects, from gathering insights into urban fabric to understanding how communities use spaces.

OBJECTIVES:

- (a) To introduce the key components, terms, actors, processes and aspects of urban environment and their inter-relationships; to explore specific themes/issues such as public spaces, physical infrastructure, socio-cultural aspects (heritage, gender, urban growth, informality, place identity, collective memory, walkability, livability, zoning regulations) and the role of architecture in shaping the urban fabric*
- (b) To learn basic methods/techniques to read, analyze and interpret (mapping, diagramming and theoretical premise) the dynamics of urban environment.*
- (c) To create/design architecture that responds to the specific demands of the urban context; understand the processes that impact architecture and the implications of design decisions on the larger context.*

OUTLINE:

The studio will be divided into two components

- (a) Rigorous, directed and brief study of an urban context (techniques mapping, diagramming) that will lead to clear understanding of dynamic networks, issues affecting the area and design strategies that build on the strength and opportunities to create meaningful spaces for communities. Various case studies (literature/site visits) will be analyzed at various stages
- (b) Suitable design intervention addressing concerns such as the need to create public realm as extension of the private domain of buildings; the impact and relationship of buildings to the larger context. The key ideas informing the selection of the design projects are multi- functional spaces, public access to majority of spaces, large gathering and event spaces which can be extended to immediate urban context. The probable architectural design projects include urban infill, revitalization and renewal of urban fragments, adaptive reuse, urban waterfront development, transportation nodes/interchanges, multi-use urban complexes including museums, performing arts centers.